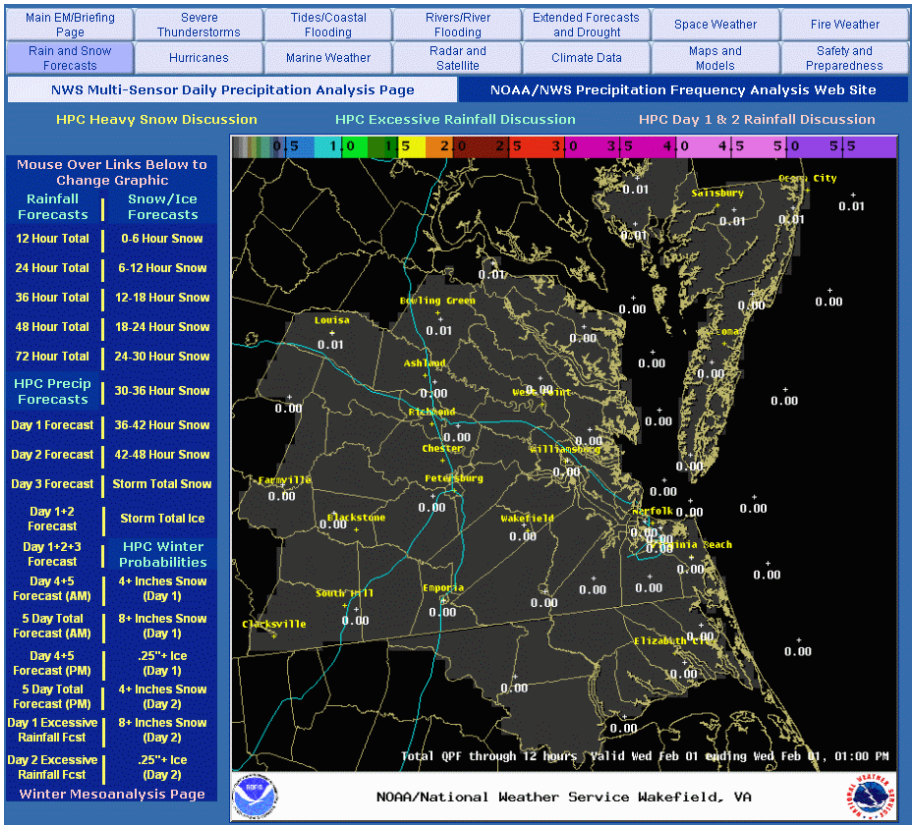
3 – The Rain and Snow Forecasts Page

NOTE: ***This page utilizes mouseover capabilities. Adaptations required to make the mouseover display compatible with mobile devices – tablets, smartphones, etc. – was completed in February 2012.***



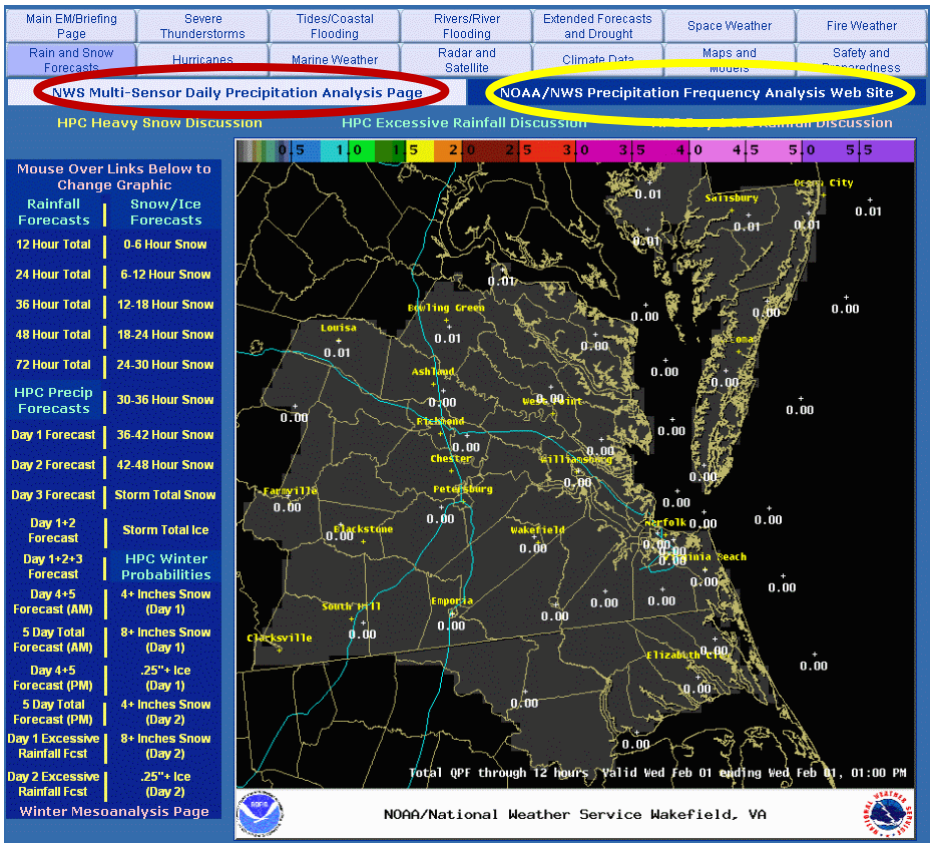
Our Rain and Snow Forecasts page can be utilized in much the same way as the Severe Thunderstorms page. At left is the winter version of this page. ***Between April and mid-November, only the left column of the links table (i.e. rainfall forecasts) will be seen.***

There are 2 types of precip forecasts on this page. The **first type are forecasts generated here at NWS Wakefield**. ***Second*** are the ***Hydrometeorological Prediction Center (HPC) national forecasts of precipitation, snow or ice***. Associated HPC discussions are links above the graphics display. The timetables are fairly self-explanatory. However, there is an important difference between our locally produced rain and snow forecasts.

The ***12 through 72 hour rainfall forecasts are running totals*** through the 72 hour period. The ***0-6 hour through 42-48 hour snowfall forecasts are individual 6 hour accumulations***. From a snowfall perspective, this gives the user an idea of not only when the wintry precipitation will begin, but in what time the heaviest snow is expected. Snowfall and ice accumulation totals for the entire storm can be found in the Storm Total Ice, and Storm Total Snow links.

The Winter Mesoanalysis Page link (bottom of the precip graphics table) will take you to a page with SPC winter weather parameters overlaid on the regional section as the Severe Mesoanalysis Page discussed in the Severe Thunderstorms tab discussion (see Appendix A of this document, or the last 2 pages of the Rain and Snow Forecasts Page Users Guide).

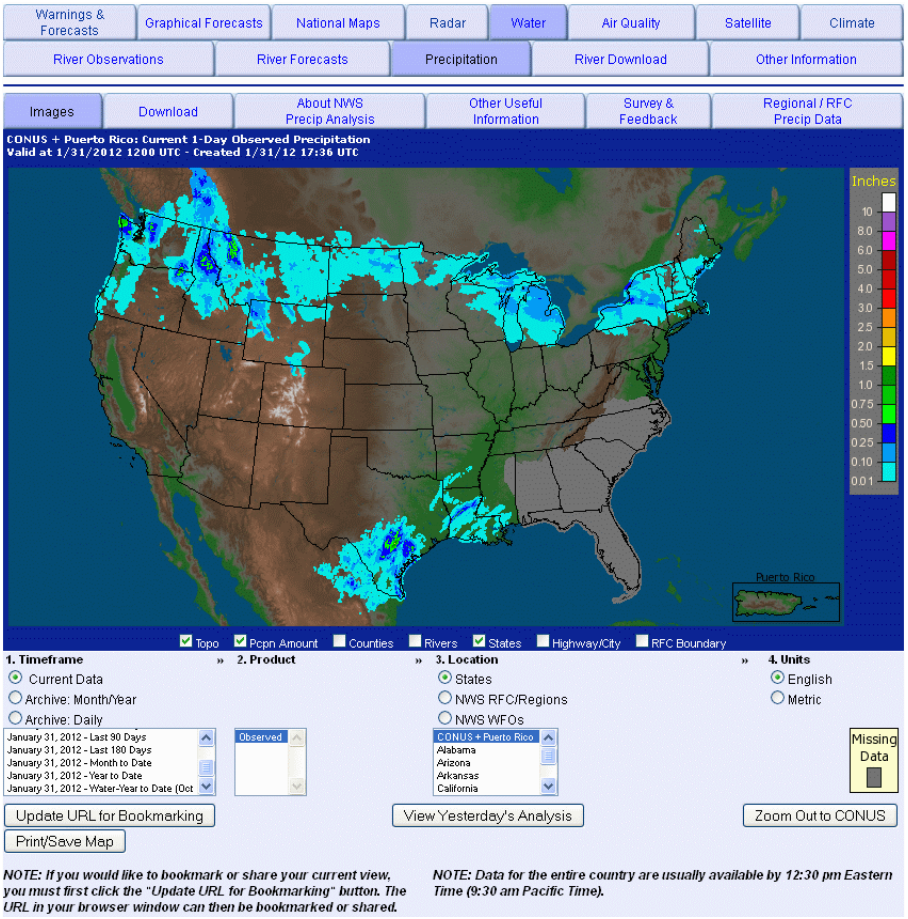
There are two other links above the graphics display that provide some very useful information. These are discussed on the next page.



The links to the ***NWS Multi-Sensor Daily Precipitation Analysis Page*** (highlighted by the red oval), and the ***NOAA/NWS Precipitation Frequency Analysis Web Site*** (highlighted by the yellow oval), provide very useful information about past precipitation, and the frequency of precipitation events of certain magnitudes, respectively.

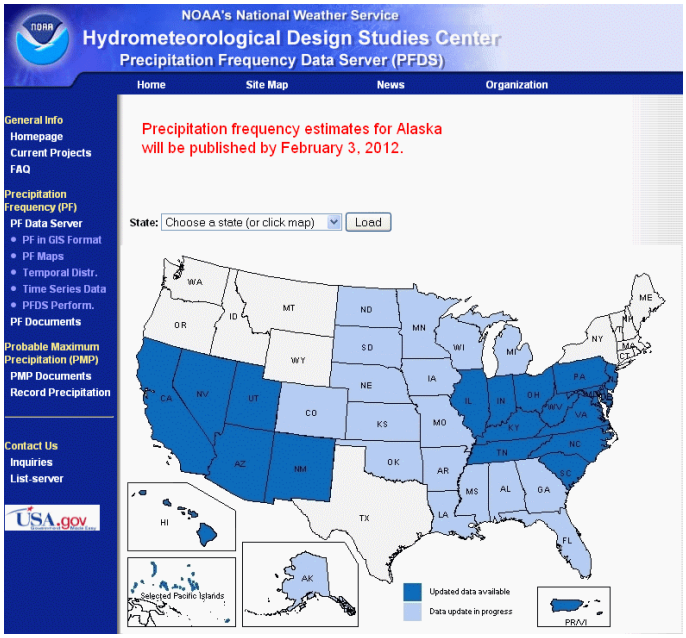
Daily Precipitation Analysis

The default map display shows precipitation across the U.S. in the last 24 hours, with the national data being available by noon each day. This graphic is derived from a combination of rain gauge measurements and radar based rainfall. The display can be changed to any state by selecting the state from the menu under **3. Location** located below the map. In addition, different products (departure from normal, percent of normal) can be obtained by selecting a different time frame (last 7 days to water year to date) under **1. Timeframe**.

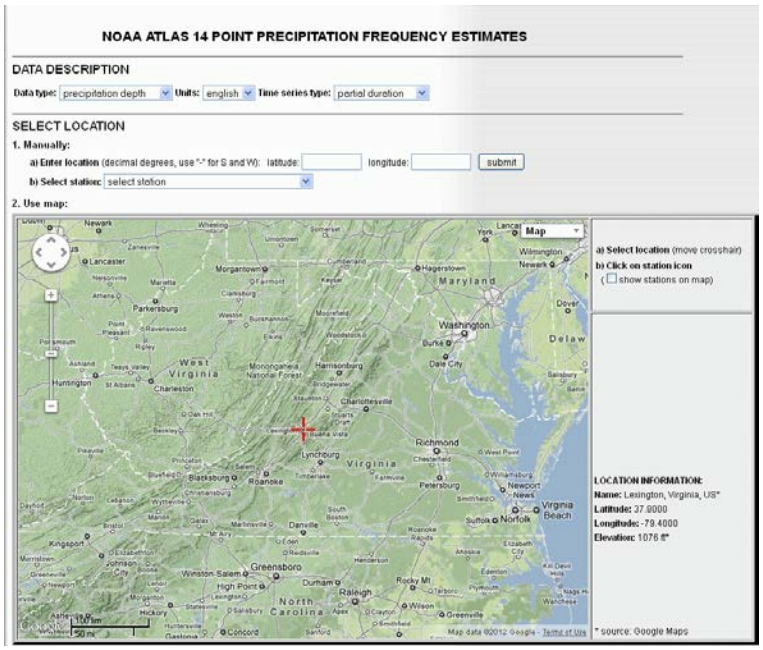


Precipitation Frequency Analysis

A precipitation frequency analysis can provide useful information to planners at the state or local level. The analysis shows the return period/interval (in years) for a given amount of precipitation for durations ranging from 5 minutes to 60 days. Click on the Precipitation Frequency Analysis link, and the page to the left appears in a new window.



Click on any state highlighted in blue, and the new map looks like this:



To obtain a precipitation frequency analysis for a given location, simply drag the red cross to the desired location, and the map will automatically re-center to that location, and a ***precipitation frequency analysis will appear below the map*** in a table similar to the one below:

PF tabular | PF graphical | Supplementary information | Print Page

PDS-based precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.396 (0.357-0.442)	0.468 (0.422-0.521)	0.540 (0.487-0.602)	0.611 (0.548-0.680)	0.687 (0.614-0.764)	0.749 (0.667-0.832)	0.807 (0.715-0.897)	0.862 (0.761-0.958)	0.929 (0.813-1.03)	0.988 (0.858-1.10)
10-min	0.632 (0.570-0.705)	0.748 (0.675-0.833)	0.865 (0.780-0.964)	0.977 (0.877-1.09)	1.09 (0.979-1.22)	1.19 (1.06-1.32)	1.28 (1.14-1.43)	1.37 (1.21-1.52)	1.47 (1.29-1.64)	1.56 (1.35-1.73)
15-min	0.790 (0.712-0.882)	0.941 (0.848-1.05)	1.09 (0.987-1.22)	1.24 (1.11-1.38)	1.39 (1.24-1.54)	1.51 (1.34-1.68)	1.62 (1.44-1.80)	1.73 (1.52-1.92)	1.85 (1.62-2.06)	1.95 (1.70-2.17)
30-min	1.08 (0.976-1.21)	1.30 (1.17-1.45)	1.55 (1.40-1.73)	1.79 (1.61-1.99)	2.06 (1.84-2.29)	2.27 (2.03-2.53)	2.48 (2.20-2.76)	2.69 (2.37-2.98)	2.94 (2.58-3.26)	3.16 (2.75-3.52)
60-min	1.35 (1.22-1.51)	1.63 (1.47-1.81)	1.99 (1.80-2.22)	2.33 (2.09-2.60)	2.74 (2.45-3.04)	3.09 (2.75-3.42)	3.42 (3.03-3.80)	3.77 (3.32-4.18)	4.22 (3.70-4.70)	4.62 (4.01-5.14)
2-hr	1.60 (1.44-1.79)	1.93 (1.74-2.15)	2.39 (2.15-2.67)	2.84 (2.54-3.16)	3.40 (3.02-3.77)	3.88 (3.43-4.31)	4.37 (3.85-4.85)	4.89 (4.28-5.43)	5.61 (4.86-6.22)	6.23 (5.35-6.91)
3-hr	1.72 (1.54-1.94)	2.07 (1.85-2.33)	2.58 (2.30-2.89)	3.06 (2.73-3.43)	3.69 (3.27-4.12)	4.24 (3.74-4.73)	4.82 (4.21-5.37)	5.42 (4.71-6.04)	6.28 (5.39-6.99)	7.03 (5.99-7.83)
6-hr	2.07 (1.85-2.33)	2.48 (2.21-2.80)	3.09 (2.74-3.48)	3.68 (3.26-4.15)	4.46 (3.93-5.02)	5.17 (4.53-5.79)	5.91 (5.13-6.61)	6.70 (5.78-7.49)	7.83 (6.66-8.75)	8.85 (7.44-9.88)
12-hr	2.45 (2.19-2.79)	2.93 (2.61-3.34)	3.67 (3.25-4.19)	4.41 (3.89-5.00)	5.40 (4.72-6.11)	6.30 (5.47-7.12)	7.27 (6.25-8.19)	8.33 (7.09-9.36)	9.86 (8.26-11.1)	11.3 (9.30-12.6)
24-hr	2.84 (2.60-3.13)	3.45 (3.17-3.80)	4.44 (4.07-4.90)	5.28 (4.82-5.82)	6.52 (5.90-7.16)	7.57 (6.81-8.32)	8.72 (7.78-9.58)	9.99 (8.83-11.0)	11.9 (10.3-13.0)	13.4 (11.6-14.8)
2-day	3.29 (3.02-3.63)	3.99 (3.66-4.40)	5.11 (4.68-5.63)	6.05 (5.52-6.66)	7.44 (6.74-8.17)	8.62 (7.75-9.47)	9.90 (8.84-10.9)	11.3 (10.0-12.5)	13.4 (11.7-14.8)	15.1 (13.1-16.6)
3-day	3.49 (3.20-3.84)	4.23 (3.88-4.65)	5.39 (4.95-5.93)	6.37 (5.82-6.99)	7.78 (7.07-8.53)	8.98 (8.11-9.85)	10.3 (9.20-11.3)	11.7 (10.4-12.8)	13.8 (12.1-15.2)	15.6 (13.5-17.2)
4-day	3.69 (3.39-4.05)	4.46 (4.11-4.91)	5.68 (5.22-6.23)	6.68 (6.12-7.32)	8.13 (7.40-8.90)	9.34 (8.46-10.2)	10.7 (9.57-11.7)	12.1 (10.8-13.2)	14.2 (12.5-15.6)	16.0 (13.9-17.6)
7-day	4.29 (3.95-4.68)	5.16 (4.76-5.64)	6.47 (5.96-7.07)	7.55 (6.94-8.23)	9.09 (8.31-9.91)	10.4 (9.42-11.3)	11.7 (10.6-12.8)	13.2 (11.8-14.4)	15.3 (13.6-16.8)	17.0 (14.9-18.7)
10-day	4.90 (4.55-5.33)	5.88 (5.46-6.39)	7.28 (6.74-7.90)	8.41 (7.76-9.11)	10.0 (9.20-10.8)	11.3 (10.4-12.3)	12.7 (11.5-13.8)	14.2 (12.8-15.4)	16.2 (14.5-17.7)	17.9 (15.8-19.6)
20-day	6.63 (6.19-7.13)	7.91 (7.38-8.50)	9.58 (8.92-10.3)	10.9 (10.1-11.7)	12.8 (11.8-13.7)	14.2 (13.1-15.3)	15.8 (14.5-17.0)	17.3 (15.8-18.7)	19.5 (17.7-21.1)	21.2 (19.1-23.0)
30-day	8.22 (7.72-8.78)	9.76 (9.16-10.4)	11.6 (10.9-12.4)	13.1 (12.2-14.0)	15.0 (14.0-16.0)	16.6 (15.4-17.7)	18.1 (16.8-19.3)	19.6 (18.1-21.0)	21.7 (19.9-23.3)	23.3 (21.2-25.1)
45-day	10.3 (9.67-10.9)	12.1 (11.4-12.9)	14.3 (13.4-15.2)	16.0 (15.0-17.0)	18.2 (17.1-19.4)	20.0 (18.7-21.2)	21.7 (20.2-23.1)	23.5 (21.8-25.0)	25.9 (23.8-27.6)	27.7 (25.3-29.7)
60-day	12.2 (11.6-13.0)	14.4 (13.6-15.3)	16.8 (15.9-17.8)	18.6 (17.6-19.7)	21.0 (19.8-22.2)	22.8 (21.5-24.2)	24.6 (23.1-26.1)	26.4 (24.6-28.0)	28.7 (26.6-30.5)	30.4 (28.1-32.4)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.